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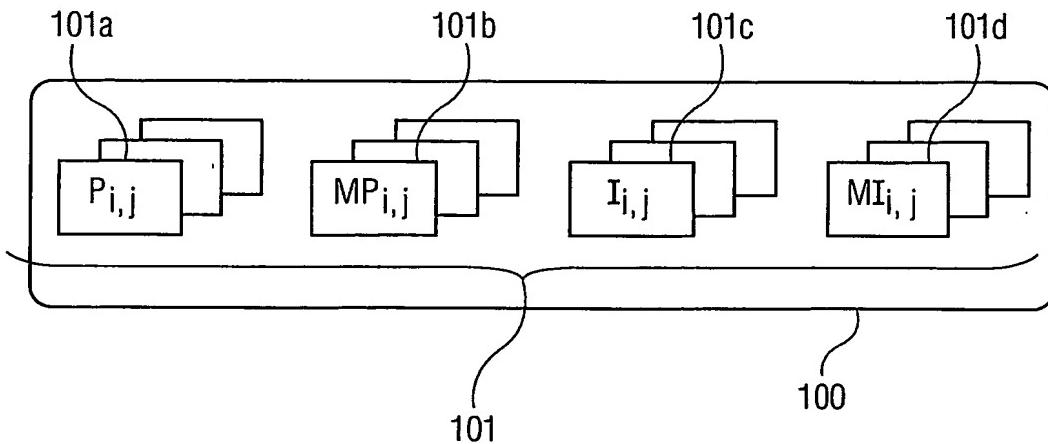
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(54) Title: AN ENHANCED METHOD FOR HANDLING PREEMPTION POINTS



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(57) Abstract: A method and apparatus is provided for use by a scheduler of a multi-processing data processing system to select task preemption points based on main memory requirements and exclusive resource usage that is cost-effective and that maintains system consistency and, in particular, enables additional preemption strategies in which: matching synchronization primitives do not span a preemption point, i.e., sub job boundary; for a particular resource R_k, all intervals/sub-jobs of all tasks that use this resource (and protect it by using synchronization primitives) are either all preemptible or all non-preemptible- i. in case they are all preemptible the synchronization primitives must be executed, and ii. in case they are all non-preemptible, it is not necessary to execute the synchronization primitives; preemption of a subset of tasks is limited to the preemption points of this subset while allowing arbitrary preemption of all the other tasks; and preemption of a subset of tasks is limited to their preemption points, preemption of the other tasks is limited to a subset of their preemption points, while allowing arbitrary preemption of their remaining intervals. That is, the present invention is a main memory based preemption technique that is not restricted to preemption only at predetermined preemption points and that avoids deadlock due to exclusive use of resources.



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